THE RELATIONSHIP BETWEEN DEFORMITY CORRECTION AND CLINICAL OUTCOMES AFTER THORACOSCOPIC SCOLIOSIS SURGERY

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INTRODUCTION

Surgical treatment of scoliosis is quantitatively assessed in the clinic using radiographic measures of deformity correction, as well as the rib hump, but it is important to understand the extent to which these quantitative measures correlate with self-reported improvements in patients' quality of life following surgery. The purpose of this prospective study was to evaluate the relationship between clinical outcomes of thoracoscopic anterior scoliosis surgery and deformity correction using the Scoliosis Research Society questionnaire (SRS-24). An earlier study published in 2006[1] reported the questionnaire outcomes after the same surgical procedure for a subset of 83 patients and examined how these scores changed during the two year follow-up period. Radiographic results over time for a group of 106 patients from our series were published in early 2009[2] but no studies examining the relationship between deformity correction and patient reported outcomes have been reported in the literature for this surgical technique.

METHODS

A series of 110 consecutive scoliosis patients receiving a single anterior rod via a thoracoscopic approach at the Mater Children's Hospital, Brisbane were included in the study. Patients completed SRS outcomes questionnaires pre-operatively and at 24 months post-operatively. Multiple regression and t-tests were used to investigate the relationship between SRS scores and the scoliosis deformity correction achieved (radiographic measurements and rib hump) after surgery.

RESULTS

There were 99 females and 11 males with a mean age of 16.1 years. The mean Cobb angle of the major thoracic curve improved from 52º pre-operatively to 22º post-operatively (59%) and the mean rib hump improved from 17º to 8º (52%). The mean total SRS score for the cohort was 99.5/120. None of the terms in the multiple regression were statistically significant. However, patients with the highest Cobb angle corrections reported significantly higher SRS scores, and therefore patient satisfaction, than those with the lowest Cobb corrections, but interestingly there was no difference on the basis of rib hump correction. There were no significant differences in questionnaire outcomes between patients with either rod fractures or screw-related complications compared to those without complications.

DISCUSSION

Patients undergoing thoracoscopic anterior scoliosis correction report good SRS scores which are comparable to those reported in previous studies for both open and thoracoscopic scoliosis correction procedures. Major Cobb correction is a significant predictor of patient satisfaction when comparing subgroups of patients with the highest and lowest major curve corrections. We suggest that mechanical complications after surgery did not negatively impact questionnaire scores because these complications are not associated with significant loss of curve correction in our patient group, as evidence by an earlier study[2].

REFERENCES

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